

**REMARKS**

Claims 1-32 are all the claims pending in the application.

Applicants have amended claims 1, 2, 9 and 10. Specifically claim 1 has been amended to add a limitation from claim 2 and claim 9 has been amended from claim 10. The Examiner is requested to enter this amendment because it places the application in better condition for appeal. Also, the amendments do not raise any new issues that would require additional searching because original claims 2 and 10 previously had all of the limitations of claims 1 and 9.

The Examiner has rejected claims 1-20 under 35 U.S.C. § 103(a) as being unpatentable over Billheimer et al. in view of Goldstein et al. (“Summarizing Text Documents: Sentence Selection and Evaluation Metrics”). Applicants traverse these rejections.

As for the first Examiner’s response regarding claims 1-20, Applicants would like to emphasize that, conventionally, query-relevant summaries are created responsive to particular queries by the purpose of the present invention is to provide an overall sense of the document content without query. The present invention uses “a score for each sentence term-frequency vector in accordance with relevance to a document term-frequency vector” to provide a generic summary of a document. Goldstein does not teach its relevance score as recited in claim 1. Goldstein discloses an approach to text summarization allowing generic summaries by scoring sentences with respect to both statistical and linguistic features.

Applicants also emphasize the following aspect of the claimed invention, which is different from the cited references.

(1) In the claimed invention, the similarity between each sentence (or passage) and the entire document is computed;

(2) The, the sentence that has the highest similarity score with the entire document is selected, and included in the summary;

(3) Then, after the sentence is included into the summary, **the sentence as well as all the words contained in this sentence are REMOVED** from the entire document.

Item number (3) is a unique approach which, is not disclosed or suggested in the cited references. Therefore, for at least these reasons, the Examiner is requested to withdraw the rejection of claims 1-20.

The Examiner has rejected claims 21-32 under 35 U.S.C. § 103(a) as being unpatentable over Billheimer et al. in view of Goldstein et al. and further in view of Furnas et al.

("Information Retrieval Using a Singular Value Decomposition Model of Latent Semantic Structure").

Applicants claimed invention is the first to use SVD for the purpose of text summarization, which is quite different from SVD-based indexing and retrieval. The differences between the two can be summarized as follows:

(1) With the SVD-based indexing and retrieval,

(a) All the documents and the query are projected into the eigen-space;

(b) the similarity between the query and each document is computed with this eigen-space; and

(c) Documents with a high similarity score with the query are retrieved, and presented to the user.

(2) With Applicant's claimed SVD-based text summarization:

(a) all the sentences (or passages) of the input document are projected into the eigen-space.

(b) Applicant regards each eigen-vector of this eigen-space as the representation of a salient topic of the input document.

(c) For the first eigen-vector (the eigen-vector with the largest eigen-value), Applicant identifies the sentence (or passage) that has the highest project value with this eigen-vector, and include this sentence into the summary.

(d) Applicant repeats the operation (c) for the second, third, ..., eigen-vectors until the length of the summary reaches the user's requirement.

From the above discussion, it is clear that Applicant's claimed invention is quite different from the SVD-based indexing and retrieval. Although both inventions use the SVD, the concepts are quite different. The SVD-based indexing and retrieval method uses the SVD mainly for the purpose of dimension reduction and noise reduction, which leads to a better similarity measure between documents and queries. In contrast, the claimed invention uses the SVD mainly for capturing the salient topics of the input document and for identifying the best sentences to represent the salient topics.

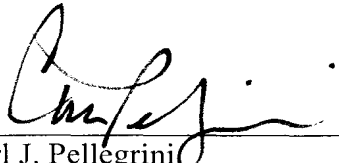
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. APPLN. NO.: 09/817,591

ATTY DOCKET NO.: CA1122

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Carl J. Pellegrini", written over a horizontal line.

Carl J. Pellegrini  
Registration No. 40,766

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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